

The



AMERICAN PERFUMER

AND ESSENTIAL OIL REVIEW



THE PERFUMER PUBLISHING COMPANY, NEW YORK

"THE OLD HOUSE."



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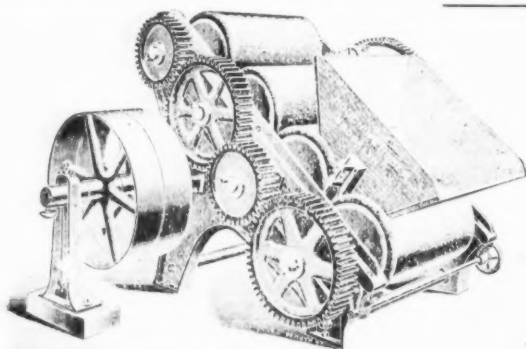


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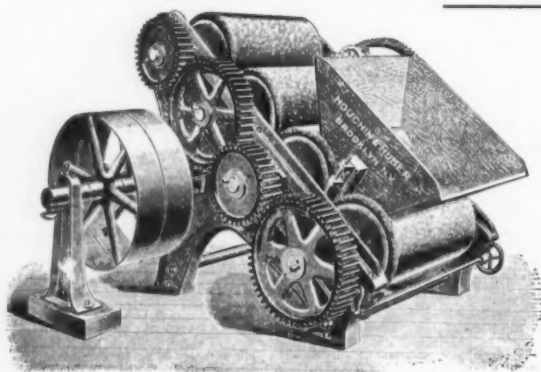


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THE AMERICAN PERFUMER

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NEW YORK, OCTOBER, 1906.

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ADVERTISING RATES ON APPLICATION.

EDITORIAL NOTICE

WE invite correspondence and special articles upon subjects of interest to all engaged in the manufacture and sale of Perfumes, Soaps, Toilet Articles, Flavoring Extracts, etc. THE AMERICAN PERFUMER and ESSENTIAL OIL REVIEW is the OPEN FORUM for each and all in the Trade. The usual right to reject objectionable matter and advertisements is reserved.

BEHIND THE TIMES.

It is a strange charge to make that we of the United States are behind the times. Yet this is true in one regard, if in no other. Efforts have been made, especially during the last session of Congress so to amend the laws of the country that the Metric System would be the standard of weights and measures, but all was in vain. The so-called conservatives, those who are always against change, no matter how advisable it seem, prevailed and we remained wedded to the antiquated English weights and measures.

Business men, whether engaged in the import or export business, know how greatly their business is hampered by the use of standards different from the rest of the civilized world, with the exception of Great Britain.

We have the decimal system in our currency, and know how convenient and simple it is. The decimal system applied to weights and measures is what the metric system really means. Why, then, should a

progressive people like ours persist in standing in its own light? There is only one thing to do. We must continue agitating the subject until at last the metric system is adopted officially as the United States standard—and not rest until it is done!

THE BOOM!

There is a boom all along the line. The merchant who can get all the goods he wants promptly is fortunate indeed. The manufacturer who does not have to send out many orders short-shipped must have been very far-sighted. We had occasion some time since to utter a word of caution to the perfumers urging them to look a little ahead and provide for the needs which must be filled. It is not surprising that the agents of the foreign houses are unable to ship all of the goods ordered, promptly. Whose fault is it if the manufacturers run short of raw material, when they wait until the very last moment to order goods?

The very seasonable weather stimulates trade of all kinds, for commerce is a single entity, all members being affected by the prosperity of others. The prospects are that the re-orders will be large and numerous. The wise men will continue their preparations, and there will be no necessity for refusing a single order. It is most provoking for any merchant to have to refuse a good order, because he is short of stock. It is just so much lost that might as easily have been made. Reserve strength is the test of power, and the merchant is necessarily judged by his readiness to supply all calls made upon him. It is the wise dealer in raw materials who is never "just out" of anything, as it is the provident merchant who always has sufficient stock, without going to the extreme of overloading.

The consequences of the present business boom, the greatest that the United States have ever enjoyed, need not be aught save beneficial if we do not permit our better judgment to be run away with. We prosper because the wealth which has been

drawn from the soil is greater than ever before. The wildest speculation alone can rob the people of the result. The autumn trade should be the best in all our history, and the perfumers, soap-makers, extract-makers, and all of our readers should obtain their full share of the business—if they are ready for it. There is still time to get to work.

SOAP PRINCIPLES.

In another part of this issue we take pleasure in presenting some very decided opinions as expressed by one of the largest soap manufacturers in New York. It may furnish food for thought to a few of our readers. What do you think about it? Is he right? Is the soap business demoralized, and is the chief cause the lack of principle on the part of those who try to steal the brains of others?

It is a most deplorable state of affairs when complaints of this kind can be and are made so openly and frequently. For this man is not alone in his charges of lack of principle on the part of some competitors. We would be loath to believe that the practice of stealing ideas is as universal in this trade as some state. There are a number of soap manufacturers who would no more think of copying the products made by another house than they would dream of forging the name of that other firm. These are the houses that dignify the business and at the same time establish their own reputation for genuine goods of quality and distinctiveness. The number of self-respecting firms ought to increase in view of the facts cited by our high-minded contributor, or the business as a whole must pay the penalty.

Soap is a cleanser, and it ought to cleanse the methods of its makers as well as the hands and faces of its purchasers. If the manufacturer preach the doctrine of cleanliness in his product, let him not be behind hand in his own mode of doing business.

THOU SHALT NOT DECEIVE!

This is the burden of the Pure Food Law according to its friends and foes alike. There is nothing uncertain about its purposes. The real purport of the law is the protection of the public against deceit of any and all kinds.

Goods must be as represented: they must not be misbranded. A compound must be so labelled; an artificial product must not be sold as the natural.

The hearing given to manufacturers during the latter part of September may not have been thoroughly satisfactory to all concerned, but that a large amount of information was conveyed to the commissioners is certain. In how far they have profited thereby is to be evidenced by the regulations promulgated by the authorities. There is one thing to do now; conform to these regulations, not merely to avoid "trouble," but because it is right.

There may be more than one hardship apparently in this or that regulation when applied to your special business, but the law is meant for all, and the individual must sometimes suffer that all may be benefited.

We do not believe that the Pure Food Law as it stands is perfect, but it is a long step in the proper direction. The honest merchant is now in a position to compete, for the dishonest manufacturer dare not sell falsified goods. All are put upon the same basis, and at the same time the public is protected against deception. The law will doubtless be amended in more than one particular as experience shows wherein it is defective. Mercantile interests will be protected, but they must be shown to be legitimate interests, and the public must be guarded against any and all danger of deceit.

WHAT THEY DO NOT KNOW.

It would be amusing if it were not sad to see the amount of misinformation appearing in the lay press concerning perfumes. On the "Woman's Page" there are all kinds of prescriptions for home-made scents, about as valuable as such free advice usually is. Lately one of the "Yellows" came out against perfumes of any and all kinds. This is like an indictment of a whole nation; it will not stand. The medical world is recognizing more and more clearly the value of odor in the treatment of disease, especially of nervous ailments. The taste for perfumes is as old as history, and the perfumers need not fear that attacks of this kind will do anything else than advertise their wares.

It is true that good taste dictates the use of the more delicate odors, and the progressive manufacturer is meeting this demand by refining his odors as far as science will permit. But the increase of the sale of perfumed soaps is one of the most striking features of latter-day commerce. A few years ago a cake of perfumed soap could not be purchased for less than twenty-five cents.

To-day soaps of fair quality and some sweet odor can be bought for ten cents, or even for five. There must be a demand on the part of the public for these cheap soaps, or the manufacturers would soon cease making them.

The taste for perfume is one of the accompaniments of refinement of taste. If we enjoy the scent of the rose or the violet, why should we not take pleasure in the perpetuation of that scent in the prepared perfume, made directly from these flowers? The sense of smell is one of the five chief senses, and its cultivation is just as necessary as the training of any other sense. The nose of the perfumer is a delicately trained organ, distinguishing the least coarseness or fault as perfectly as the musical ear detects the slightest discord. A flaunting odor is in as bad taste as a flaunting color; but we trust that these great authorities will not give us a colorless world as well as a scentless one, because of the use or overuse of either.

The American manufacturer has a simple task before him. To supply the varied taste of the public with perfumes of all grades and degrees, of all specific odors and combinations. It is then for the consumer to choose that which suits him or her best, and they will do it no matter what foolishness is printed about the "Use of Perfumery."

OIL OF CAJUPUT.

From a paper by R. A. Cripps, read at the Midland Counties Chemists' Association, we take the following:

Some time ago my attention was drawn to a sample of Linimentum Crotonis [Brit. Pharm.: Croton Oil 1 fl. oz., Cajuput Oil $3\frac{1}{2}$ fl. oz., Alcohol $3\frac{1}{2}$ fl. oz.] which did not form a clear solution, but consisted of two layers, the upper and larger one being thin and limpid, the lower one oily. When warmed the liquid became homogeneous, but again separated into two layers on cooling. The cause was evidently not due to the croton oil, the same sample having on former occasions given a clear liniment; the spirit used was of B. P. strength; it was, therefore, clear that the cajuput oil was at fault. I therefore examined the oil and found its spec. grav. to be 0.913. This being so much below that of any sample I had previously examined, I concluded that the oil was either adulterated or that the distillers of cajuput oil are in the habit of collecting the distillate in fractions without subse-

quently mixing them, this being one of the earlier fractions. I have, therefore, examined a number of samples in the original bottles (old wine or spirit bottles) with the following results:

Average of ninety-five samples of cajuput oil, 0.9232.

Average of ninety-three samples of cajuput oil, excluding two low samples (viz., spec. grav. 0.913 and 0.8945), 0.9236.

The color of the samples varied from pale brownish yellow to bluish green, the color bearing no relation to the specific gravity. With the exception of the sample of spec. grav. 0.913 all these oils came in four separate consignments, the members of each consignment varying in specific gravity to the extent of from 3 to 7 in the third decimal place, not counting the last anomalous sample, although eighty-five out of the ninety-five samples ranged from 0.922 to 0.925. I think, therefore, we may consider it proved that the mixing of various fractions or batches of oil is performed very imperfectly or not at all. The anomalous sample (spec. grav. 0.8945) possessed a slightly peculiar odor, was of a pale bluish green color, and failed to make a satisfactory croton liniment. I have not yet been able to further examine this oil, but intend submitting it to fractional distillation at an early date.

I may mention that it is important that the specific gravity of cajuput oil be taken at exactly 15.5° C., in consequence of the high expansion equivalent of the oil (which I have found to be .0009 for each degree Centigrade between 13° C. and 23° C. unless this equivalent be borne in mind).

In consequence of these results, together with the specific gravity given by Mr. West (*Pharm. Journ.*, xix., page 235), I should suggest that the Pharmacopœia contain among the tests of cajuput oil "spec. grav. from 0.922 to 0.926 at 15.5° C."

Soap Grease is Exempted.—David C. Link, the well-known New York broker, telegraphed Dr. A. D. Melvin, Chief of Bureau Animal Industry at Washington, as follows: "Steamship companies declining grease declared for soap purposes unless accompanied by certificate of exemption issued by your department. Is this necessary to enable vessel's clearance under order 137, if so, where are these procurable?" The reply was: "Unedible tallow or grease from animal not considered meat food product; certificate not necessary for same."

NOT SOFT SOAP.

BY A PROMINENT NEW YORK MANUFACTURER.

[For obvious reasons the writer of the following does not wish his name to appear, but our readers may rest assured that the utterances are those of a progressive and wide-awake soap manufacturer, who, just because he is shipping tons of soap from his factory every day, deploras the demoralization that has in some way permeated the business in all sections of the United States.—ED.]

I do not know to what pass we soap-makers are coming! Nor am I in a position to explain the demoralized condition of the trade fully. I do see, however, some of the difficulties which we face and some of the preventable evils with which we have to contend.

If any manufacturer be frank he must confess that the margin of profit in the soap business has been cut down to the last hair. It is a wonder to me how some of the manufacturers continue to pay their bills, when they sell goods at prevailing prices. All the raw materials are high, but the soap-makers in their extreme eagerness for business have cut down the price of the finished article until the largest manufacturers are compelled to be satisfied with a fraction of a cent profit on a box of toilet soap.

All this might be borne however, leaving it to the fittest to survive if the competition were carried on fairly and squarely, as in other lines.

It must not be forgotten that any one can go into the soap business, even with the most limited capital. There are no great secrets which are not public property. No complicated machinery is necessary. In fact the chief value of the oldest and best established soap factory lies in its trade marks. It is at this point that the dishonest manufacturer competes unfairly. No sooner has a progressive manufacturer originated a new brand, an especially attractive package, than imitators spring up ready to sell his customers almost identical goods in strikingly similar wrappings.

Unfortunately it is not only the small manufacturers who lend themselves to this meanest of competitive methods. Some of the largest soap makers have copied names as closely as they dared in the face of the copyright law, working irretrievable harm, not simply by interfering with the legitimate sale of the original goods, but hurting the reputation of the original by producing an inferior article.

Here I have put my finger on the real defect of all imitation. The man who imitates must either furnish an inferior article which looks like the original or sell the same article at a lower price in

order to do business. Under existing conditions in the soap business he reduces the margin of profit to less than nothing. If this same imitator were to expend the same amount of ingenuity upon originating a new cake of soap and a new package that he spends in a skilful imitation he would have a genuine success, something that is worth while and is at the same time profitable. The imitator is like the skilful safe-breaker. If he devoted his mechanical genius to earning an honest livelihood he would not only make a better living than by stealing, but he would not go to jail. There is little difference in principle between the thief who steals a valuable trade mark and him who steals bonds or cash from a safe. Both are the property of another man and represent real value. The penalty ought not to be different. The laws of the United States as to trade marks are by no means as stringent as they should be. Fines and prevention of further manufacture are not sufficient deterrents of the unprincipled. Imprisonment would go far towards protecting the valued rights of originators.

If I were to sell my factory to-day the machinery in it would not bring ten per cent. of its cost, unless I just happened to find some one who wanted to go into the soap business. But give me my trade marks intact and unimitated, and hundreds of thousands of dollars would not buy it.

I do not believe that there is any special degenerative power exerted by the making of soap which should sap away any man's business principles. If a man do not understand this business, if he cannot figure, cannot prevent leakages, does not know where and how to buy, he cannot hope to survive the terrible strain of twentieth-century competition; but if this man fall let him fall because he was a poor business man, not because of unfair, dishonest competition. What encouragement is there to a manufacturer to advertise the good article which he has originated if he is not to gather the fruits of his own sowing?

LOOK OUT!

G. D. Graham is what he calls himself. He pretends to be connected with the firm of Stafford Allen & Sons, Ltd., London. He always wants to borrow money. The trade should beware. He is an adventurer disavowed by the English firm.

DECEIVING THE PEOPLE.

BY HENRY LEEBURGER, OF LEEBURGER BROS., NEW YORK.

That the people must not be deceived is the burden of the Pure Food Law passed at the latest session of the United States Congress. This the last analysis proves to be the actual bearing of all of its provisions.

I have given no little study to the entire question of Pure Food products for the past three years, or ever since the passage of the special provisions dealing with this matter which were added to the New York State Agricultural Law in Article XI in 1903.

It seemed to me that this was only the first step towards a general law which has since been enacted by the Federal authorities along the exact lines of our State provisions. In fact, the New York law has been copied almost *verbatim et literatim* in the United States Law which has made so great a stir.

I see no special reason for any great excitement on the part of honest manufacturers. It is simply a question of having the goods in the package correspond with the label on the outside of the package, and *vice versa*. There is no reason in the world that the manufacturer of any goods should put on box or bottle a misleading label. The people have a right to get what they pay for or are led to expect by the name under which an article is sold. But the law does not prevent a manufacturer from selling compounds if he labels them as such.

There is no reason that makers of Essences should not give their customers strawberry, raspberry, cherry essences made from the fruit alone, without any additional coloring matter or cheap preservatives. Naturally these are not so cheap to make as those from others, but they are pure, and the consumer has a right to demand pure and wholesome goods.

Of course, there are some flavors that it is impossible to produce from the fruit direct, such as apple, currant, pear and banana, and others, but the law permits the making of these flavors synthetically if the proper labels are put upon the containers. It is no deceit of the public if on the label you read "Fruit Ether Artificial Coloring Essential Oils." The same is true of Vanilla Extract. If simply labelled this way, the purchaser rightfully demands an extract made from vanilla beans. If the extract is made from Vanillin and

Cumarin then it is necessary to put on the label "Vanillin. Cumarin. Artificial Color. Essential Oils." The purchaser may then choose whichever extract he prefers at the price.

I believe that the manufacturer should be willing to place on his goods a certificate in the following words (which will do for a guarantee: "The Contents of this package being absolutely without chemicals or Chemical products, but of Vegetable and Animal origin, we guarantee the purity when in our containers."

I am of the opinion that the Pure Food Law will harm no straightforward dealer; in fact, it will words (which will do for a guarantee): "The facturer will be compelled to come up to the standard of purity demanded by the law, and he will compete fairly with the better class of manufacturers.

The question of coal tar colors seems to bother a number of manufacturers, and it is admittedly true that a small quantity of purified color of this kind is not deleterious, but the difficulty lies in defining the 'small quantity'. What is a little for the extract manufacturer may be too little for the confectioner. The only way to prevent abuse seems to be to close the door altogether against the use of mineral colors, unless a vegetable color or an absolutely harmless color can be obtained and used. It has been claimed at the public hearings held before the special commission last month in New York that according to a strict interpretation of the law salt cannot be used. This is only the finest kind of hair-splitting and can benefit no one. The best policy for American manufacturers of extracts and confectionery, and of all other food products, is to comply with the provisions of the law in spirit and to the letter. It may be true, as some have contended, that the natural color of Tomato Catsup is brown and that the people desire it red, but the law will not permit this artificial coloring and the public will soon become educated up to the uncolored product.

As a matter of fact, it is more economical for the maker of pure goods not to tinker with them and add artificial colors or flavors. The makers of impure goods should not be able to conceal their shortcomings by using foreign substances.

The Pure Food Law may indeed put some persons "out of business", but these are the ones at

whom it is aimed. The deceit of the public must be stopped, and this law will go far towards accomplishing so worthy a purpose.

If any manufacturer will ask himself: "Am I selling honest goods, truthfully labelled?" and he is able to answer his own question with an emphatic "Yes," he may be sure that he is on the safe side of the Pure Food Law, and in this way business men learn to trust and confide in each other—lay aside envy and prejudice and come to a realization that there are other things besides the making of money at the expense of some one's health.

VEGETABLE VERSUS SYNTHETIC COLORS.

By DR. EDWARD GUDEMAN.*

The difficulties in making the experiments with preservatives are small, as compared with those made to determine the action of colors on the human system. While relatively large quantities of preservatives are used in these experiments, the amount of color used in food products is a great deal less.

Food products contain as small an amount as one part to five millions or less. The physiological experiments generally referred to are those made by Dr. Weyl some fifteen years ago, and the few experiments made by Dr. Weber some eight years ago. Dr. Weber states that one part of color in 1,600 has strong physiological effect, retarding about 3-10 of the peptic or pancreatic digestion.

In his experiment, the single quantity of color Dr. Weber used was one part in sixteen, but he figured his ratio according to bulk due to dilution.

There is no doubt that many substances, good, bad or indifferent, will react similarly to the few colors Dr. Weber tested, if proportion of same is $6\frac{1}{4}$ per cent. of substance to be digested, as in this case. I don't believe that one pound of sugar with $6\frac{1}{4}$ per cent. salt added to it would make a very palatable article, even if taken dissolved in 100 pounds of water, and it is also a fact that peptic or pancreatic artificial digestion will not be normal on any food product containing nearly 7 per cent. of salt, or vinegar or sugar condiments, or many other substances which are not considered harmful or deleterious and on which no restrictions are placed if they are pure and true to name. On the spur of the moment I cannot recall any published

physiological test made with vegetable colors. The actual fact is that vegetable colors are, to a great extent, more harmful than harmless, pure synthetic colors.

The result of artificial digestion tests made on some vegetable colors in comparison with synthetic colors have shown that vegetable colors retard digestion more than synthetic colors used in quantities to give the same shade.

It is no doubt true that the synthetic colors are a great deal stronger than vegetable colors, and on that account a great deal less of them is required to produce the same color effect. Time is too limited to go into details with regard to comparative physiological tests. A color should show no effect on respiration or digestion when taken for several days in quantities equal to two drachms a day for a grown person.

Colors should be divided into two classes, the harmful color and the harmless color, and if this division is made according to physiological tests or artificial digestive tests it will be found that many synthetic colors have less physiological effect than an equal or even smaller amount of vegetable colors. Chemical analysis will, in many cases, not distinguish between vegetable and synthetic colors, and in some cases the resemblance is so close that it is only by determining foreign impurities in vegetable coloring that same can be designated as such color, and it is possible by making an impure synthetic color, using the vegetable color, when relying only on chemical determinations or analyses. When other tests such as dyeing properties are used, it is easy to differentiate between most of the colors, and the strongest agitation against the synthetic is due to the fact that a food chemist cannot determine whether the colors used in food products belong to the harmless class or the injurious, and to cover up this inability, he prefers to condemn the whole class of colors and at the same time permits other colors, animal, vegetable or mineral, to be used that are as active and in many cases much more active than the small amount of harmless synthetic colors. The argument that by means of synthetic colors it is possible to palm off poor stuff for good stuff holds just as well for vegetable or other colors.

Manufacturers use the colors by compulsion to gratify the æsthetic tastes of the consumers and they try to use just as little as possible.

It is just as easy to control food colors as it is to enforce the requirements in regard to fertilizers

* Read before the National Jobbing Confectioners' Association at their late meeting, Niagara Falls, N. Y.

of food stuffs or alcohol or importation of foreign substances. If, instead of condemning and legislating and ruling against coal tar or aniline colors, you would favor and recommend the use of the harmless, non-poisonous, synthetic colors, you would quietly drive harmful colorings out of the market—but in doing so, some of the vegetable colors, whose use is now permissible, would have to disappear in food products. Vegetable or non-synthetic colors are often adulterated, and you will find it stated by Dr. Kabler, chief of drug laboratory in Dr. Wiley's department, that he has found druggists to pick out impure cochineal, and when their attention was called to it, excuse themselves with the statement that they had never seen the pure article.

Dr. Wiley is on record as being adverse to the pure harmless synthetic colors as compared with vegetable colors, and bases this on the fact that vegetable colorings are extracted from vegetables, and, therefore, even have a food value. I do not believe that Dr. Wiley or any other food chemist, would care to undertake to determine the difference in food value of the same product, one pound of which contains one-fourth grain or less per pound synthetic color, and the other part containing some amount of vegetable coloring.

The action of colors in bulk is radically different from same amount of color when intimately mixed with a food product. Some physiological tests made by myself have shown that five grains of a harmless synthetic color, when taken as a single dose, will show coloration within three to five hours in the urine, while the same amount of color diffused in food and consumed does not show discoloration in the urine at all. The same experiment, increasing the color to 15 grains, showed coloration in the urine inside of five hours, when taken in bulk, and only very slight coloration after about two hours for a period of about 36 hours when color was intimately mixed with food taken at one meal. These experiments allow me to draw the conclusion that there is a difference in the physiological effect when taken in broken doses, if I may so designate it. The difference in these experiments was just in the manner in which the color was introduced into the stomach, the difference of time being not more than one-half hour to three-quarters of an hour. From these experiments and others made mainly on animals, I have come to the conclusion that it is not at all conclusive to judge the physiological action of a color when introducing same into

the system in bulk, as under these conditions, mass reaction must be taken into consideration, and what allowance to make for this, I do not know. It has convinced me absolutely that if a harmless, synthetic color is introduced into the system in amounts of five to one hundred times greater than could ever be introduced with consumption of all food articles consumed in the course of a week, and if this excessive quantity introduced in bulk as a single dose has no deleterious effect, that such color can be considered as absolutely harmless.

When such physiological tests are actually made on food colors that are offered in the market, there certainly is no reason to condemn them simply because they are synthetic colors. When a concern is willing and offers to submit for such tests any and all of their food colors, to all parties with authority as to the use of such colors, commissioners, health authorities, or chemists, it is no more than fair to test these colors, instead of legislating against them, and to allow and favor and recommend another class of colors that will not stand such practical tests, chemically and physiologically considered. Food chemists have absolutely no foundation on which to stand when they condemn a harmless synthetic color and the only excuse they can make is that they are not able to distinguish between a harmful color and a harmless color in food products, and on that account they condemn these colors absolutely, and use such condemnation as a cloak to cover their inability to differentiate between the good and the bad.

Here is a new "Vegetable Soap" according to a late report:

The commercial production of vegetable soap in powder and cakes, especially as a family industry, is the novel recommendation of a French chemist, after an investigation for the Algerian Government. The *Sapindus utilis*, an imported tree, begins bearing at the age of six, and at its best may yield each year 200 pounds or more of a small, fleshy fruit. The now abundant product has not been utilized, although similar to the soap substitutes of China, Japan, India and the Antilles. The powdered fruit in water gave a soapy solution, which acted slowly on account of containing a gummy substance, but on roasting before grinding the powder with warm water quickly yielded a frothy liquid.

THE HEARING OF THE PURE FOOD LAW COMMISSION.

The United States Government Commission opened a hearing on September 17th in the hall of the Board of Trade and Transportation, at 203 Broadway, New York, on the best means of enforcing the Pure Food and Drugs act which goes into effect next January. So many manufacturers and experts from all parts of the country attended the first two days' proceedings that subsequent hearings were held in a courtroom in the Federal Building. The commission was composed of James L. Gerry, representing the Treasury Department; S. N. D. North, of the Department of Commerce and Labor, and Dr. H. W. Wiley, of the Department of Agriculture. Dr. Wiley was chairman of the commission.

FIRST DAY.

In opening the proceedings Dr. Wiley said:

"Our object is to receive as much information as possible respecting the best methods of enforcing the act. To this end we have invited the manufacturers and dealers in foods and drugs to meet us here for the purpose of giving us their views respecting the character of these proposed rules and regulations."

Dr. Wiley said that the commission desired to have the new law go into operation with the least possible disturbance to business and with the least possible inconvenience to the manufacturers and dealers of the country.

Continuing he said:

"The Food and Drugs act has two great purposes in view, which stand out clearly throughout all its sections, namely, first, to prevent the introduction of any injurious substances to food and drug products, or the abstraction of any valuable properties therefrom; second, to prevent the misbranding of any package of food or drug products, either as to the nature of the contents of the package or their properties, or as to the place, country, state or territory where made or produced. These two purposes of the law have equal weight. The first set of offenses is called 'adulteration,' the second 'misbranding.'"

Briefs were then submitted by William C. Breed, representing most of the wholesale grocers in the country; George C. Gorham, another lawyer, representing the American Cotton Oil Company and others. The use of colors, flavors, and preservatives,

however, took up most of the time of the first day's hearing.

Many wanted to be heard on that topic. The speakers denounced the use of deleterious matters in sufficient quantities to harm any one.

One speaker wanted to know how samples of food and drugs that might later be condemned would be collected. He asked:

"Would they be collected by deputies who would get a considerable revenue out of it, as he had known in many cases?"

Dr. Wiley said the Government would try to prevent anything of that kind.

Dr. Edward Gudeman, the well-known chemist of Chicago, Ill., representing a large number of firms, talked about harmless coloring matters. They would be all right, he argued, if they were used in small quantities.

D. W. Hutchinson, vice-president of W. H. Hutchinson & Son, soda water makers, of Chicago, Ill., also spoke for coal tar coloring. One ounce of coal tar red will color over 2,000 gallons of soda water, he said, while an ounce of coal tar yellow or orange will color over 4,000 gallons.

SECOND DAY.

The use of colors was again the principal topic discussed. Dr. Hugo Schweitzer argued for the use of aniline colors. Eight or ten of the 2,000 aniline colors might be dangerous to health when used in excessive quantities, he admitted, but even they were no more injurious than caffeine and alcohol.

Dr. Gudeman also declared that only a small fraction of aniline colors were used in food products, and that he had made extensive tests of the forty most used aniline colors, finding them harmless in the quantities used. He argued that the burden of proof of the harmfulness of colors should rest with the Department of Agriculture.

In pleading for the use of benzoate of soda, D. W. Anderson, representing the National Association of Manufacturers of Wholesale Soda Water Supplies, mentioned that there was \$30,000,000 invested in soda water fountains in this country, and he thought such large interests called for consideration, particularly as next year's supplies were already made up and packed.

THIRD DAY.

Commissioner James L. Gerry read the tentative recommendations for regulations governing the misbranding of foods and drugs. These recommendations stipulate that the principal label containing the name of the article shall be in English, and in no smaller type than long primer; that labels already in stock which need to be changed shall not be changed until July 1, 1907, instead of January 1, when the law goes into effect, and that the substance, manufacturer, and place of production shall be on the label.

George L. Douglas, representing a number of interests, argued against the naming of the place of manufacture. He also said he thought that section of the rules that said no drug product should be named by one ingredient alone when it contained more than one would be objectionable to the drug trade. He said that labels that have been standards in the drug trade for thirty years would have to be reconstructed.

Commissioner Gerry said that no geographical name should be applied to a product when it bore no real relation to the place of the production.

Much of the time was taken up by the representatives of two rival whiskey concerns that have been fighting one another ever since the law was proposed.

FOURTH DAY.

The National Ice Cream Manufacturers' Association, through Dr. John A. Wesener, was heard on the question of butter fats and foreign substances in ice cream. He argued that from 7 to 9 per cent. of butter fat was all that should be required. He said that 14 per cent.—now required by law—would increase the cost of ice cream to the consumer and endanger health because of the large percentage of fat substance. He asserted that the use of gelatine was absolutely imperative to keep the product from melting and becoming unfit for food. He said the best milk for the manufacture of ice cream was condensed milk. Condensed milk, he said, contains 8 per cent. of butter fat. Dr. Wesener spoke at considerable length on the importance of milk condensers to the farmer. If ice cream was legislated out of existence, he said, it would hurt the manufacturers of condensed milk and the farmers. The law says ice cream must contain 14 per cent. of butter fat, but, asked Dr.

Wesener, "if the manufacturers put out ice cream containing only 12 per cent. of butter fat, what must they call it?"

Dr. Wiley said, "not a standard ice cream," and added that if gelatine was used the product would have to be inspected by the government.

The chairman then stating that the commissioners were willing to hear discussions as to whether ice cream was a proprietary article or not, E. A. G. Intemann, president of the Retail Confectioners Protective Association of the State of New York, said: I represent an association composed of three hundred retail confectioners of Greater New York, and on their behalf I wish to present a brief statement. We differ somewhat on the presentation made by the ice cream manufacturers, and we have the different recipes to present to your board for consideration.

The Chairman: Let me ask you, do you consider ice cream a proprietary article?

Mr. Intemann: Yes, sir.

The Chairman: Will you state to the commission the reasons why you think it is?

Mr. Intemann: Yes, sir.

Mr. Intemann then read the following statement:

The Retail Confectioners' Protective Association, represented by their executive committee, respectfully submit the following as being modified standards of ice cream regarding purity and wholesomeness which is a necessary consideration, because of the fact that ice cream is a special nourishment for convalescents as well as for its palatableness and a food in general.

1. Ice cream is a frozen product made from cream and sugar with or without a natural flavoring and contains not less than ten (10) per cent. of milk fat.

2. Ice cream is a frozen product made from cream, milk and sugar, with or without gelatine or gum tragacanth or harmless coloring matter, and with or without a natural flavoring, and contains not less than six (6) per cent. of milk fat.

3. Fruit ice cream is a frozen product made from cream, milk and sugar, with or without gelatine or gum tragacanth, or harmless coloring matter and sound, clean mature or preserved fruits, and contains not less than six (6) per cent. of milk fat.

4. Nut ice cream is a frozen product made from cream, milk and sugar, with or without gelatine or gum tragacanth or harmless coloring matter, and sound non-rancid nuts or synthetic flavoring and contains not less than six (6) per cent. of milk fat.

5. Old-fashioned ice cream is a frozen product made from cream, milk, eggs and sugar, with or without gelatine or gum tragacanth or harmless coloring matter, and with or without a natural flavor, and contains not less than four (4) per cent. of milk fat.

This we respectfully submit. In doing so, gentlemen, I wish to explain that I have been in the manufacture of ice cream myself for a great many years, and we have attached to this an analysis of cream before it was frozen and after it was frozen on which we base our arguments. Pure cream of 16 per cent. butter fat in the frozen state produced 11 per cent. of butter fat. That seems very strange. Why is that? That can only be explained by a practical ice cream manufacturer, as all ice cream manufacturers will admit that cream granulates by freezing, in other words, turns hard into butter, and thus you will very often have fine particles of fat in the ice cream which taste like lard. They are simply butter. Any ice cream analyzed as made of pure cream does not contain these particles of fat, which seem to be only at certain places, hanging especially around the dashers and side of the can. That is extracted from the cream. Therefore you can never produce the same butter fat in frozen ice cream that it contained before it was frozen. And there is a difference also in the granulation; the colder the ice cream is put into the freezer, the less granulation. Now, we cannot always have it at that low temperature and therefore it loses its fatness. Why these deductions appear of 6 and 10 per cent., we will explain by stating that the milk, be it fresh or condensed, contains also butter fat. That part I am perfectly sure is never extracted with the freezer process. Only the fresh cream that is added granulates. The old-fashioned ice cream, which as presented contains milk, is a most nourishing ice cream, as anyone who is familiar with it knows. It is often used as a food. I know people who have had typhoid fever and pneumonia and lived on the old-fashioned ice cream for weeks without eating anything else. It is cooling to the system and nourishing. Eggs contain no butter fat and therefore it has a low standard of fat, yet it may be proved to be superior to any other of the ice creams made.

H. A. Johnson appeared for makers of preserves in bulk. He pleaded for a ruling favoring the use of preservatives. As they are used to-day, he said, preservatives are necessary. The business, he said, is absolutely dependent upon harmless preservatives.

John S. Fletcher appeared as an independent advocate for nuts. He said they were sometimes cured with sulphur.

Dr. Wiley said that if the sulphur did not penetrate the edible part of the nut the commission would not object to its use.

FIFTH DAY.

On the concluding day of the proceedings the subject of confectionery was up for discussion. Under this subject the discussions hinged on a definition of the word confectionery and the list of substances to be construed as confections under the law, definitions of the terms "terra alba," "barytes," "talc," "chrome yellow," "narcotic drug," and the kinds of colors and flavors permitted and methods of control or preventing the addition of any deleterious or poisonous ingredients at the time of manufacture.

Commissioner Gerry read the tentative rulings on the subject which are as follows: Mineral substances of all kinds are specifically forbidden in confectionery whether they are harmless or not. Only vegetable or animal coloring matters shall be allowed in confectionery. Colors produced by chemical process are not to be considered vegetable or animal colors. Narcotic drugs are all those enumerated in Paragraph 2, Section 8, of the law and all other drugs of a narcotic nature.

Dr. Gudeman pleaded for the right of confectioners to use coal tar colors in confection products. He said:

"I understand that the chairman of this commission has given an opinion in a letter to the effect that the new food law does not prohibit in any of its clauses the use of artificial coloring in any food product, with the exception of confectionery, and that referring to confectionery the law is explicit and forbids absolutely the use of mineral colors and aniline colors or coal tar colors or synthetic colors, these colors being synonymous, although two of them are really misnomers and not correct at the present time. The ruling against the coal tar colors being that made from coal, and, coal being a mineral, they are in themselves mineral substances. The law states that 'if it contains,' referring to confectionery, 'terra alba, barytes, talc, chrome yellow or other mineral substances or poisonous colors,' etc.

"I call special attention to the fact that the words

of the law 'or other mineral substances' refers to what precedes the word 'or,' and that it takes a stretch of the imagination to make that refer to what follows, 'or poisonous colors.' I am of the opinion that the definition of coal tar color as made from coal, and that coal tar is a mineral, is not correct. If it is anything at all, it is an impure element, and the impurities carried mechanically by the coal are the substances which enable a distillation product of coal to be made into colors.

"If this opinion of your chairman, who, no doubt, will dominate this commission on scientific chemical points and who is more competent in my estimation than any other chemist in this country, prevails you will force very nearly 75 per cent. of the confectioners out of business, because the main ingredient used in confectionery contains mineral colors. The magnitude of the manufacturing confectionery business is tremendous. I do believe I am not far wrong when I say that there is not a city in the country with 5,000 inhabitants or more that has not a manufacturing confectioner, who may or may not do business beyond the boundary of his state.

"Consider the sugar interests. I do not know whether that interest will appear here. The average amount of mineral color used in cane sugar is five pounds to 1,000,000 pounds of the finished product. This is added during the processing, and fully 70 per cent. or more remains with the syrup, and the amount left in the sugar is only a trace and hardly perceptible. I am considering that all of the mineral color used remains in the sugar. This will amount to three and one-half grains per 100 pounds of sugar, and I take this figure as the amount consumed in the United States as per capita annually."

Thomas E. Lannen, representing the National Confectioners' Association, said that the following clause in the law had been prepared and was advocated by his association:

"That confectionery shall be deemed adulterated 'if it contains terra alba, barytes, talc, chrome yellow, or other mineral substances or poisonous color or flavor, or other ingredients deleterious or detrimental to health, or any vinous malt, or spirituous compound or narcotic drug.'"

But the association hadn't the faintest idea, he said, that coal tar or harmless mineral colorings were to be prohibited. If the rule as to mineral substances were forced to its extreme, he argued, the use of salt and even water in confectionery would be forbidden.

E. A. G. Intemann strongly pressed for the admission of harmless coal tar products in confectionery. He said he had been in the business since 1869 and had used vegetable colors, but invariably found them unsatisfactory.

H. W. Hoops, vice-president of the National Confectioners' Association, spoke upon the clause that the organization was instrumental in having inserted in the pure food laws of the various states, and said that the clause was never meant to exclude harmless mineral products.

Dr. Hugo Schweitzer submitted a list of coal tar colors which were regarded as harmless in Europe. He said:

"Red cabbage contains a dozen coal tar colors, and such colors, are vegetable from the chemical point of view, and in accordance with the modern divisions of 'organic and carbon derivatives.' There is as much division between this division and the old one as there is between petroleum and Schweitzer cheese.

The subject of guarantees on products was then discussed, the question being whether the guarantees should be made a part of the invoice or put on each package. The law provides that no dealer is responsible when selling goods which later are judged adulterated or misbranded if he holds a guarantee from the manufacturer.

Dr. Wiley said that any form of guarantee would be considered by the commission, which made the manufacturer responsible.

Walter Baker, of Walter Baker & Co., argued that the guaranty would have to come from the person from whom the retailer bought the goods. Several other speakers followed, supporting in the main this contention. The commission, though not expressing assent with the arguments advanced, conveyed the impression that all the suggestions offered would receive full consideration.

The commission then took up the question of inspection of goods.

Louis Runkel, of Runkel Bros., advocated that the commission rule favorably on the admission of the word "French" before sweet chocolate. The word "French", he said, did not indicate the geography of the source of the product, but from long use had become recognized as a trade descriptive term for sweet chocolate. The opinion was gained before the close of the hearing that this feature would not be ruled against.

Descriptive words, such as "fancy," "extra," "large," and so on, being trade terms used to in-

dicade size and quality, it is believed, will not be ruled against by the commission.

This concluded the proceedings, Dr. Wiley saying that there would be no haste shown on the part of the commission to enforce regulations that are to be adopted where, through conditions existing, such enforcement would work a hardship on the trade as a whole. Time would be given to allow the manufacturer to adjust his business and methods to the new order of things. The commission and the officials who would directly administer the food law would adopt a broad, general policy. It would take the stand, he said, that the most good would be done for everybody by the gradual adoption and enforcement of the law. He thought it might take several years before the operation of the law in all particulars would be complete.

BOOM FOR THE METRIC SYSTEM.

KYNOCES OF BIRMINGHAM ANNOUNCES THAT IT WILL ADOPT IT.

LONDON, Oct. 16.—Kynochs, Limited, the well-known Birmingham manufacturers of ammunition and explosives, announce that they are tired of awaiting legislation establishing the metric system in Great Britain, and that they have decided to be the first great British firm to adopt that system.

Arthur Chamberlain, brother of Joseph Chamberlain, who is managing director of Kynochs, says that the change will be surprisingly simple, involving only the alteration of the scales on the arms of weighing machines and the simplification of account books. Instead of eight or nine columns for weights and three for money there will be wanted only two columns, one for weights and one for values. Wages will be calculated in decimals and translated afterward into pounds, shillings and pence.

Officials of the Decimal Association say that British manufacturers are losing millions annually in their dealings with countries using the metric system by not adopting it. A renewed attempt will be made at the coming session of Parliament to pass a bill for the compulsory adoption of the system.

LOOK OUT!

G. D. Graham is what he calls himself. He pretends to be connected with the firm of Stafford Allen & Sons, Ltd., London. He always wants to borrow money. The trade should beware. He is an adventurer disavowed by the English firm.

CLOVES.

The summary of the condition of the clove market abroad as given below presents the best possible survey of the situation.

STOCK ON 1ST OCTOBER.

	Holland.	London.	New York.	Total.
1899....	81,000	32,300	± 15,000	128,300 bales
1900....	75,800	21,300	" 14,000	111,100 "
1901....	62,200	15,000	" 13,000	90,200 "
1902 ..	48,500	14,000	" 10,500	73,000 "
1903....	28,900	16,000	" 7,500	52,400 "
1904....	4,800	17,700	" 3,000	25,000 "
1905....	9,200	26,400	" 6,000	41,600 "
1906....	6,400	23,500	" 2,000	31,900 "

ARRIVALS AT ZANZIBAR, AUGUST-SEPTEMBER.

1901	1902	1903	1904	1905	1906
30,000	11,200	18,600	24,000	10,000	12,500 bales

TOTAL CROP.

1st August—31st May.

CONSUMPTION.

1st October—30th September.

150,000 bales.....	1898-1899.....	100,000 bales
45,000 "	.....1899-1900.....	60,000 "
60,000 "	.....1900-1901.....	80,000 "
85,000 "	.....1901-1902.....	100,000 "
110,000 "	.....1902-1903.....	130,000 "
30,000 "	.....1903-1904.....	60,000 "
175,000 "	.....1904-1905.....	160,000 "
60,000 "	.....1905-1906.....	70,000 "

Crop estimate, 1906-07, 35,000 bales. (This crop is an early one, coming in during September-December.)

STATEMENT.

Visible stock on 1st October, 1906	32,000 bales
Invisible (if any), say.....	8,000 "
Total crop 1906-1907, say	50,000 "

Total..... 90,000 bales

AVERAGE CONSUMPTION.

1898-1902.....	85,000 bales
1902-1906.....	105,000 "

Greatest, as well as most common, of all cacti is the "soap weed," which grows wherever cacti grow, and which is man's only friend in the great Southwestern deserts of the United States and in Mexico. It furnishes always a quantity of water when cut. As its name indicates, it can be manufactured into a soap, perhaps the least alkaline soap ever made, even though the weed itself may grow in the center of an alkali desert. Beer is brewed from it, the Indians make a hemp-like fiber from it, and horses and men can eat parts of it if the spines are cut away. Also when it shoots up into one great arm skyward it tops that arm with one of the most gorgeous flowers in the world.

THE RELATIONS BETWEEN STRUCTURE AND SMELL IN ORGANIC COMPOUNDS.

By GERTRUD WOKER.

(Concluded from September number.)

It appears almost as though the sulphur atom were capable of replacing two CH groups without causing any essential change in the smell or other properties of a compound. This similarity of properties would be of course the reason for the difficulty in separating benzene from thiophene, and toluene from methyl thiophene. All the compounds in which sulphur has its lowest valency are characterized by a more or less intense and unpleasant smell. If one compares with these the compounds in which sulphur is either quadrivalent or hexavalent, it appears that these latter are either odorless or have a relatively pleasant smell as in the case of the alkyl esters of sulphurous and sulphuric acids. In the esters of sulphurous acid there is one double bond while there are two in the esters of sulphuric acid. A natural consequence of this is that the smell is more intense in the odoriferous derivatives of sulphuric acid than in the corresponding derivatives of sulphurous acid. Sulphur dioxide, however, has a very irritating effect; but it has two double bonds.

It has already been pointed out in this paper that the sulphur compounds usually have more of a smell and a worse smell than the corresponding oxygen compounds. This may be explained on the basis that substances with bivalent sulphur are unsaturated even when there are no double bonds and that the bivalent sulphur increases the effect of double bonds, when present, just as trivalent nitrogen increases the effect of multiple bonds.

Lately, the view has been gaining ground that oxygen is quadrivalent in some compounds. In that case one could ascribe the odor of alcohols and ethers to the presence of an unsaturated oxygen atom. That substances containing oxygen have a less marked smell than those containing sulphur would then be explained on the ground that bivalent sulphur is much more unsaturated than bivalent oxygen, as shown by the lesser readiness of the latter to assume and hold a higher valence.

Even if one were satisfied with this explanation for the odor of alcohols and ethers there still remain many substances which are undoubtedly saturated and which yet smell. A striking case of this is hexachlorethane which smells like camphor and which crystallizes in plates that are volatile in the air. The following substances also have a cam-

phor smell: camphor, trimethyl carbinol, acetone chloroform, dimethylallyl carbinol and higher alcohols of this series, durol, borneol, methyl tertiary butyl carbinol, ethylidene malonic acid, silicon tetraethyl, and silico-heptyl alcohol. While these substances, which smell like camphor, belong to all sorts of different classes, they all have one peculiarity in common, at least one carbon atom in which the hydrogen has been completely replaced by other groups. In every case at least two and usually three of the substituting groups are identical. The methyl group appears most often as a substituting group and chlorine is fairly well represented, while in one case there are two carboxyl groups and a double bond.

The presence of the double bond appears to be unimportant. The character of the fourth substituting group is of little importance except when it acts strongly against the other three. The effect of a negative carboxyl group, for instance, weakens the effect of three positive methyl groups.

Essential for the existence of a smell like camphor is the complete substitution of all the hydrogen attached to a carbon atom and the substituting groups should be as much alike as possible. In this way the intramolecular repelling forces become especially great and the increase of the internal pressure causes a maximum volatility.

A strong smell is characteristic of all substances in which a carbon atom is overloaded with identical groups, either positive or negative. This is brought out in Table XI.

TABLE XI.

Name	Smell
Chloroform	Strongly ethereal
Bromoform	" "
Iodoform	Characteristic
Trichlornitromethane	Stifling
Chloral	Pervasive
Chloral hydrate	Peculiar
Dichlor-acetone	Pungent
Thiocarbonyl chloride	Suffocating
Perchlor methyl mercaptane	Unpleasant
Ethylidene chloride	Ethereal

In harmony with this is the fact that normal alkyl derivatives of a substance almost always have a fainter odor than the iso derivatives, while these have a fainter odor than the corresponding tertiary compounds (Table XII).

TABLE XII.

Name	Smell
<i>n</i> -Valerianic acid	Repulsive
Isovalerianic acid	More repulsive
Trimethyl acetic acid	Stifling acid
<i>n</i> -Butyl alcohol	Peculiar
Secondary butyl alcohol	Intense
Isobutyl alcohol	Unpleasant
Tertiary butyl alcohol	Like camphor

Artificial musk, one of the most strong smelling substances, has a carbon atom united to three methyl groups. A carbon atom overloaded with methyl groups is to be found in the hydrocyclic compounds (Table I); in the most closely related aromatic substances (Table II) such as cymol, thymol, carvacrol and others; and in the related substances with open rings such as citral, etc. Most of the perfumes come under the mentioned heading of substances which combine great volatility with the property of affecting the nasal passages pleasantly. The volatility is brought about by the overloading of the carbon atom with methyl groups while the scent is due to the presence of double bonds.

The closing of the ring is only of minor importance both in regard to smell and to other properties. The pleasant odor of the terpenes and their oxygen derivatives remains after the ring is broken. As an instance we may take the often-cited citral and compare it with pulegone. In other types the slight effect of closing the ring can be shown (Table XIII).

TABLE XIII.

Name	Smell
Tetra methyl carbxylic acid	Like fatty acids
<i>n</i> -Valerianic acid	Repulsive, sour
Pentamethylene carboxylic acid	Sour
<i>n</i> -Caproic acid	"
Hexahydrophenol	Like fusel oil
<i>n</i> -Amyl or capryl alcohol	" " "
Diethylamine	Ammoniacal
Pyrrolidine	"
Ethyl acetamide	Like acetamide
α -Pyrrolidon	" "

Cases may, however, arise in which the closing of the ring has an effect. This will happen when the closing of the ring is accompanied by a marked increase in the internal tension. Thus trimethylene has a faint smell while propane is odorless. Erythrit ether has a pleasant odor while erythrit has practically no smell. Glycidic acid has an irritating smell which does not occur in glyceric acid. The same contrast is to be found between the sharp smelling propylene oxide and propylene glycol. In di- and tri-methylene imines an accentuation of the ammoniacal smell can be noticed, as compared with dimethyl- and methyl-ethylamine. Dimethyl ketone and its lower homologues have an aromatic smell which changes to a strong odor of peppermint in di-tetra methylene ketone.

According to Baeyer's tension theory it is to be expected that the closing of the saturated five-membered ring would have the least effect on the properties and especially on the smell because the system closes without perceptible change in tension. So far as is known, the facts are in accord with this view.

The closing of the six-membered ring and still more of the seven-membered ring causes, however, an increase in tension which shows itself in an increase in the odor. Ethyl propyl ketone and dipropyl ketone smell like acetone. On changing into keto-hexamethylene and suberone respectively, a strong smell like peppermint is developed precisely analogous to what can be observed in the closing of the ring with di-tetramethylene ketone. The sign of the tension change in ditetramethylene ketone is, however, the opposite of that for keto-hexamethylene and suberone. In addition, it is to be noted that the closing of the ring always has an immense effect upon the odor if the multiple bonds of a system are affected thereby, as in the case of paraldehyde or cyanuric acid.

A few anomalous cases must now be discussed. It has been shown that multiple bonds usually cause the smell and that the intensity of the smell increases with increasing accumulation of multiple bonds. Quite apart from unsaturated side chains, benzene derivatives possess three double bonds while the di- and tetra-hydro addition products have two and one respectively. We should therefore expect the genuine benzene derivatives to have a more noticeable odor than the hydrogen addition products. This is by no means the case, as may be seen from Table XIV.

TABLE XIV.

Name	Smell
Benzene	Peculiar
Dihydrobenzene	Garlic-like
Tetrahydrobenzene	" "
Benzoic acid	Peculiar
Dihydrobenzoic acid	Like cinnamon
Δ^4 -Tetrahydrobenzoic acid	Like valerian

Also carvomenthol, with its odor of orange blossoms, and other hydrocyclic compounds have a stronger smell than the corresponding aromatic compounds, such as carvacrol for instance. This peculiar behavior agrees also with other observations wherein benzene behaves in many respects as though it were more saturated than the really unsaturated di- and tetra-addition products (Thiele).

As a matter of fact these and other observations have caused some people to draw the conclusion that there are no double bonds in benzene. This conclusion is unquestionably right if one looks upon a "double bond" as something unchangeable. There are, however, no conclusive reasons for assuming the unchangeability of the state which one calls the double or the triple bond. The facts favor the opposite view that we have to deal with something changeable, which depends on temperature, pressure and the nature of the substituting groups. The degree of saturation and consequently the number of "bonds" varies with the conditions. There are cases known in which the constitution of the substances shows that they unquestionably contain double bonds and yet a suitable substitution will cause these substances to lose their power of adding on substances. This power to form addition products can also disappear with rising temperature, as has already been pointed out. Such substances behave exactly as though they were saturated compounds and that is probably what they are.

Something similar is obviously true for benzene, whose three double bonds are modified by cross connections and so bring about a very peculiar state which is half way between that of a saturated and an unsaturated compound.

Another anomaly is to be found in compounds of the uric acid group. The molecule of uric acid is composed entirely of groups which increase the odor; namely, three carbonyl groups, one ethylene group, and four unsaturated or trivalent nitrogen

atoms. In spite of this, uric acid is entirely odorless and, in spite of four chromophoric groups, it has no color. It is quite possible that these remarkable phenomena are connected with the fact that a decrease in the refraction and dispersion takes place with the carbonyl group is united directly to the amino group (*Zeitschrift für physikalische Chemie*). The decrease in the refraction and the dispersion constants would be significant of an approach to a saturated state. The cause of the decrease in the constants and especially of the absence of smell is perhaps to be found in the fact that the carbonyl group has a markedly negative character while the amino or imino group is strongly positive. The attraction between these two opposing complexes may decrease the volatility, for this is on the other hand increased by the presence of two like, and therefore mutually repelling, groups. This molecular attraction between positive and negative parts of a molecule is possibly also the reason why metallic salts of volatile acids are not volatile and are therefore odorless.

Mention must also be made of the odoriferous saturated compounds which show a normal structure and apparently no overloading of a carbon atom with identical groups. Among such substances are pentane, hexane and heptane which are all very volatile and which all have a noticeable ethereal odor. Other instances are the methyl halogen compounds, CH_3Cl , etc. If one writes the formulas for these compounds a little differently, pentane become a diethyl methane, hexane an ethyl propyl methane, and heptane a dipropyl methane. The odor of pentane and heptane would be explicable on the basis of two identical groups attached to the same carbon atom. The odor of hexane is much fainter, as was to be expected from the substituting groups being similar but not identical.

The smell of the saturated secondary alcohols and ethers can be explained in the same way if one does not care to fall back on the unsaturated oxygen atom.

The volatile monohalogen derivatives of the saturated hydrocarbons, methyl fluoride, methyl chloride, methyl iodide, and also the primary alcohols are characterized by the fact that the hydrogen combined with the halogen in the halide acid or with the hydroxyl in water has been completely replaced by a methyl or a homologous alkyl group. These compounds are therefore to be classed with those in which a complete substitution of hydrogen by alkyl groups has occurred. The only difference is

that there is only one replaceable hydrogen atom in a halide acid. The behavior of these halogen compounds could also be explained as due to an unsaturated halogen, since the halogen may have a valence of seven.

The most important results of this paper may be summed up as follows:

1. An odoriferous substance must be volatile.
2. An odoriferous substance may be a saturated or an unsaturated compound. The first case is rare and the smell is then perceptible only when the substance is extremely volatile.
3. The volatility is increased especially by overloading a carbon atom with identical groups. Substances, in which all the hydrogen of at least one carbon atom has been replaced, often have an odor like camphor when at least two of the substituting groups are identical. Such a system has the maximum volatility. Under these circumstances it is indifferent whether the compound is saturated or unsaturated, though three of the substituting groups must be the same if the compound is saturated. The nature of the fourth is important only when it works against the other three.
4. The combinations of groups which increase the volatility and smell of saturated compounds act similarly in the case of unsaturated compounds.
5. Everything else being the same, the odor of a compound increases in intensity as the degree of saturation decreases.
 - 5a. Substances with a triple bond usually have a more marked odor than substances with a double bond.
 - 5b. The presence of several double or triple bonds increases the smell.
 - 5c. Presence of an unsaturated atom may also be the cause of a substance having a smell.
 - 5d. The combination of unsaturated atoms and of multiple bonds increases the smell just as does the presence of several multiple bonds.
 - 5e. The greatest increase in odor is obtained when the same substance has multiple bonds, unsaturated atoms, plain or hydrogenized phenyl or naphthalene radicals, and carbon atoms all of whose hydrogens have been replaced.
6. It may happen that a combination of groups may nullify the smell even when each group by itself would increase it. This occurs with the uric acid compounds where electro-positive imido groups are attached to electro-negative carbonyl groups. The mutual attraction of these complexes causes a pressure exerted inwards while a pressure exerted out-

wards is essential to volatility. This latter tension can obviously be obtained through the repelling action of similar groups.

Berne, Switzerland.

The Container is generally taken as an index of the contents. It pays to study the subject of attractive cans because the can helps to sell the material in it. Experts are not to be found on every corner waiting to advise manufacturers of the Very Best Obtainable Packages, but the American Stopper Co. has a corps of these experts, and at the same time it works in the light of years of extensive manufacturing of receptacles for all kinds of goods that go into cans.

This company is independent of the "Trust" and therefore it gives its customers the choicest packages at a minimum cost. It has to do so, because it is reaching for good business, and the best of it is that this Company is getting some of the choicest and biggest orders simply on the basis of the tastiest and most reasonable containers.

Make inquiry of the American Stopper Co. whether you desire large or small tins, round or square. You will get full value for every cent you spend, because their experts understand every detail of the business.

LOOK OUT!

G. D. Graham is what he calls himself. He pretends to be connected with the firm of Stafford Allen & Sons, Ltd., London. He always wants to borrow money. The trade should beware. He is an adventurer disavowed by the English firm.

The Old House of Welch, Holme & Clark Company, whose advertisement, showing a cut of their building, appears on another page, was established in 1838, and they are still at the old corner, Barrow and West Streets, New York. The company was incorporated in 1892, and Mr. A. M. Sherrill has been President and Treasurer of the Company since its incorporation. They are one of the leading houses in the Soap Material Line in this city, and enjoy an enviable reputation for fair dealing. Any one desiring to purchase Cocoanut Oil, Palm Oil, Olive Oil Foots, etc., would do well to communicate with this concern. They are large handlers of tallow, grease, and all soap products. We can highly recommend this house.

ON THE SCENT.

BY MR. S. SENCE.

Will the new Pure Food Law force the Five Cent Extracts out of the market? Some of the retailers will be glad if it does, as there is little profit in this class of goods.

The soap factory of Almy P. Goodridge in Medford, Mass., was injured by fire on October 9th. The damage was not very extensive on account of the good work of the local fire department.

It is reported that the Babbitt Soap Works are shortly to be removed from New York City to what was formerly known as Granton Station, N. J., but this place will hereafter be called "Babbitt," in honor of the new factory.

The National Soap Manufacturers' Association held its annual meeting in Chicago, Oct. 4th. The officers elected were: Joseph Beech, of Boston, Pres.; Louis Waltke, of St. Louis, Vice-Pres.; Edmund Reardon, of Boston, Sec.-Treas.

There are numerous rumors of a combination of the British Soap Manufacturers, with a capitalization of \$75,000,000. The main object is to regulate prices, because under present competitive conditions no one is making money. Will the American Manufacturers be compelled to take similar steps.

James M. Bush, Esq., president and chairman of W. J. Bush & Co., Ltd., of London, Eng., arrived in this country the early part of the month on the *Oceanic*. He was accompanied by Mrs. Bush, son, maid and valet. Mr. Bush is making a semi-annual visit to the American branch and expects to remain several weeks.

If you want a paste convenient for transportation and easily prepared, take the Condensed Paste Powder, made by the Arabol Manufacturing Company, 100 William Street, New York. It is an excellent sticker, and its cost compares favorably with the old flour paste and other preparations.

It is reported that at the next meeting of the Remmers Soap Co., of Cincinnati, the capital of that corporation will be increased from \$100,000 to \$300,000. Mr. Richard W. Neff, the president of the company, states that the funds thus raised will be used for the new buildings to be erected next spring in St. Bernard, the new soap-town.

State's Attorney L. H. Burrell has filed bills of information against four merchants in Freeport, Ill., and three in Lena, under the Pure Food Laws of the State. Poor cider-vinegar, lemon extracts and adulterated pepper are the causes of the prosecutions. It is stated that the merchants will turn the prosecutions against the manufacturers.

October 13th might have been an unlucky day for the Scott Soap Factory in Poughkeepsie, N. Y., had it not been for the timely alarm given by a passer-by who noticed some excelsior and paper burning under some boards, laid near the wall of the factory. The work of the incendiary was spoiled by a few buckets of water, and the factory was saved.

The French Government has just nominated M. Louis Roure, of the well-known firm of Roure-Bertrand Fils, as Chevalier of the Legion of Honor, in recognition of the exhibit made by this firm and the personal efforts of M. Roure at the Louisiana Purchase Exposition, in the interest of Perfume raw materials. France knows how to reward her enterprising sons.

Mr. Henry Dalley, of Lazell, Dalley Co., has returned with his family from a very pleasant trip abroad. What might have been a very serious accident was escaped with slight shocks. In order to avoid a bicyclist the auto in which Mr. Dalley and his son were riding was forced out of the road and ran full tilt against a telegraph pole. The occupants were thrown out, but fortunately no bones were broken.

Richard Boone, of Humboldt, Kansas, has said that the time was coming when the crude oil near Humboldt, which is now all but going to waste, would be utilized in making soap. Various persons there have experimented with it and they have found that it is better than the ordinary soap. "I have made several samples of the soap," Mr. Boone said, "and I think it will cleanse anything save a man's character."

THE AMERICAN PERFUMER

PATENTS, TRADE-MARKS, ETC.



PATENTS GRANTED.

830,611.—Frederick W. Murray, New Brunswick, N. J., assignor of one-half to Henry B. Kent, New Brunswick, N. J. Top for powder containers.

830,694.—Arthur L. Whitney, San Mateo County, Cal. Can and cover.

831,002.—Max H. Isler, Mannheim, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine. Anthracene derivative and process of making same.

831,527.—Julius A. Landsberger, Alameda, Cal., assignor to Hermetic Closure Co., Chicago, Ill. Vacuum can-sealing machine.

831,767.—Edmund P. Boden, Santa Clara, Cal. Removable stopper and strainer.

831,884.—Frank H. Merrill, Los Angeles, Cal. Soap-drying machine.

832,654.—Reuben Brooks, Gloucester, Mass., assignor to Russia Cement Co., Gloucester, Mass. Collapsible tube.

833,095.—Nathaniel Thurlow, Niagara Falls, N. Y., assignor to The Portchester Chemical Co., Port Chester, N. Y. Derivative of pinene and process of making same. CLAIM 8.—The substance pinyl oxalate, produced by the action of oxalic acid on turpentine and having the formula $C_{10}H_{16}(C_2O_4H_2)$, said compound having a boiling point of about 157° to 160° at 680 mm. vacuum, breaking up on heating into camphor, carbon monoxide, and water, and on heating with water into oxalic acid and hydrocarbons.

TRADE MARKS REGISTERED.

56,331.—Atlantic Mfg. Co., Baltimore, Md. Washing compound.

56,335.—Jordan Marsh Co., Boston, Mass. Tooth powders.

56,339.—Vail Bros., Philadelphia, Pa. Tooth powder.

56,351.—Griggs, Cooper & Co., St. Paul, Minn. Flavoring extracts.

56,378.—Delbert E. Prall, Saginaw, Mich. Perfumes.

56,407.—Arabol Mfg. Co., New York. Liquid adhesive pastes, etc.

56,414.—J. G. Haas Soap Co., St. Louis, Mo. Laundry soap.

56,441.—D. R. Bradley & Son, New York. Perfumery, toilet waters, extracts and colognes.

56,460.—A. Mendleson's Sons, Albany, N. Y. Potash and lye.

56,517.—Gerhard Mennen Chemical Co., Newark, N. J. Toilet powder.

56,520.—Holton & Adams, New York, N. Y. Almond meal compound for the toilet.

56,554.—Commonwealth Mfg. Co., Boston, Mass. Methyl alcohol.

56,590.—Harry Knob, Cleveland, O. Soap powder.

56,623.—Pratt Food Co., Philadelphia, Pa. Harness soap.

LABELS REGISTERED.

13,040.—W. F. Blocker, Fort Smith, Ark. "CAMPHO-MENTH" for foot paste.

13,041.—Collins & Co., Bellingham, Wash. "MADAME CELESTE DEPILATOIRE" for hair remover.

13,042.—Carmel E. Beeman, Cleveland, O. "BEEMAN'S MASSAGE CREAM AND SKIN FOOD."

13,067.—Harriet L. Galbraith, Washington, D. C. "KOLOL HAIR RENEWER."

13,099.—James L. Devenny, Pittsburg, Pa. "Nickel (5c.) Talcum."

13,089.—Thym-a-tol Dental Co., Norwich, N. Y. Title: "THYM-A-TOL TOOTH PASTE."

13,121.—Lehn & Fink, New York. Title: "RIVERIS TALCUM POWDER."

TRADE MARKS APPLIED FOR.

963.—J. G. Haas Soap Co., St. Louis, Mo. Laundry soap.

1,767.—F. F. Ingram, Detroit, Mich. "BE GOOD TO YOUR HARE." (For dandruff cure and hair tonic.)

5,822.—The Waukesha Arcadian Co., Waukesha, Wis. Mineral waters, ginger ale and wild cherry phosphate.

6,023.—McKesson & Robbins, New York. Tooth powder.

6,062.—Wollwäscherei und Kämmererei, Dühren bei Hannover, Dühren, near Hanover, Germany. Hydrous and anhydrous adeps lanae or lanolin, for toilet preparations, etc.

9,995.—The Andrew Jergens Co., New York and Cincinnati. Facial and shaving soap.

9,996.—The Andrew Jergens Co., New York and Cincinnati. Dental cream.

10,212.—The N. K. Fairbank Co., Chicago. Soap.

10,413.—Lever Bros. Co., Cambridge, Mass. Soap.

10,414.—Lever Bros. Co., Cambridge, Mass. Soap.

10,416.—Lever Bros. Co., Cambridge, Mass. Soap.

10,417.—Lever Bros. Co., Cambridge, Mass. Soap.

10,960.—The Duranoid Mfg. Co., Newark, N. J. Harness-soap.

11,129.—Lever Bros. Co., Cambridge, Mass. Soap.

11,168.—The N. K. Fairbank Co., Chicago, Ill. Washing-powder.

11,857.—Dr. Chase Chemical Co., Philadelphia, Pa. Flavoring extracts.

11,921.—The N. K. Fairbank Co., Chicago, Ill. Washing-powder.

12,223.—Johann Maria Farina, Cologne, Germany. Eau-de-Cologne.



- 13,577.—Ozone-Vanillin Co., Niagara Falls, N. Y. Vanillin.
 14,217.—Johann Maria Farina, Cologne, Germany. Eau-de-Cologne.
 15,328.—E. Conti, & F., Livorno, Italy. Soap.
 15,505.—The Lulu Mfg. Co., Waterloo, Iowa. Scouring-powder.
 16,748.—Joseph M. Layat, St. Louis, Mo. Perfumes, etc.
 17,532.—James T. Wetherald, Boston, Mass. Toilet powders, etc.
 17,705.—R. Hudnut's Pharmacy, New York. Toilet water, etc.
 17,706.—R. Hudnut's Pharmacy, New York. Face powder.
 17,709.—R. Hudnut's Pharmacy, New York. Talcum powder.
 17,760.—The Lavaline Mfg. Co., Milwaukee, Wis. Cleaning-powder.
 17,771.—Kennicott Water Softener Co., Chicago, Ill. Soda ash.
 17,792.—Robert K. Henry, New York. Skin creams or lotions.
 18,003.—Fels & Co., Philadelphia, Pa. Soap.
 18,060.—Stauffer Chem. Co., San Francisco, Cal. Borax.
 18,434.—John J. Murphy, New York. Perfumes, etc.
 18,508.—Joseph Simson, Paris, France, assignor to Special Products Co., a corporation of New Jersey. A residual liquid obtained in manufacturing synthetic camphor and serving as a substitute for spirits and essences.
 18,599.—Moritz W. Klaff, Milwaukee, Wis. Soap.
 18,637.—Corliss Chem. Co., St. Louis, Mo. Skin-washing compound.
 18,740.—Alexander Cristadoro, New York. Hair tonics.
 19,528.—Parke, Davis & Co., Detroit, Mich. Toilet specialties.
 19,658.—Magic Keller Soap Works, Ltd., New Orleans, La. Laundry soap.
 19,659.—Frederick Loeser & Co., Brooklyn, N. Y. Antiseptic mouth wash.
 19,809.—Frank L. Steele, Long Beach, Cal. Hair tonics.
 19,949.—The Fairchild & Shelton Co., Bridgeport, Conn. Soap.
 20,406.—Pitts Sanitary Co., Providence, R. I. Soap.
 20,407.—Pitts Sanitary Co., Providence, R. I. Soap.
 20,495.—The Cosmo Co., Philadelphia, Pa., Toilet creams.
 20,601.—Frederick G. Bagley, Buffalo, N. Y. A washing compound.
 20,671.—Chas. J. Leedy, Baltimore, Md. A cleaning preparation.
 20,786.—Joseph Oberndorfer, Salt Lake City, Utah. Laundry tablets.
 21,085.—John Moran Bedford, Paris, Ky. Flavoring syrup.
 21,680.—John T. Stanley, New York. Skin-scour soap.
 38,250.—Victor C. Bell, New York. The ornamental design for a bottle, as shown.

DESIGN REGISTERED.

NEW INCORPORATIONS.

SAPANOL CHEMICAL CO., PORTLAND, ME.—To manufacture and deal in soap. Capital, \$2,000,000. Officers: President, Millard W. Baldwin, Portland; treasurer, Clarence E. Eaton.

PITTSFIELD SOAP CO., SPRINGFIELD, MASS.—To manufacture mill, laundry and toilet soaps. It has assumed the liabilities of the Lenox Chemical Co. Capital, \$25,000. Officers: Arthur W. Plumb, president; More Farkarsh, vice-president; Clement F. Coogan, treasurer; Frank E. Pierson, clerk.

KLENO MANUFACTURING CO., Weymouth, Mass. Capital, \$50,000. President and Treasurer, A. L. Gladioni.

ELOMA MANUFACTURING CO., EAST PUEBLO, COL.—To manufacture extracts and druggists' sundries. Capital, \$10,000. Officers: J. W. Thomas, president; C. H. Stowe, vice-president; Otto Thomas, secretary; E. N. Hansman, treasurer.

NEW CASTLE SOAP CO., NEW CASTLE, IND.—Capital, \$40,000. Directors, William D. Williams, Harry Burris and Arthur Kennedy.

RACINE SOAP CO., RACINE, WIS.—Capital, \$1,000. Incorporators: Ward C. Clemons, C. L. Horlick and I. A. Fish.

CROWN SOAP WORKS, BOSTON, MASS. (524 Rutherford Ave., Charlestown).—Capital, \$50,000. Charles Shepherd, president; Harlan A. Blunt, treasurer; Wm. W. Rich, clerk.

FOREIGN CORRESPONDENCE.

MEETINGS OF MANUFACTURERS—GROWERS OF LAVENDER, VETIVER, ETC.

[The news appearing under this heading from month to month is the latest possible authentic reports from the various floral culture centers or markets. Just because these are reports taken on the spot, reflecting actual conditions which are constantly changing, apparent contradictions are due to altered conditions, and must be so considered.—ED.]

CANNES (A. M.) FRANCE.—An important meeting of the Distillers of Perfume-Raw-Materials of the Maritime Alps was held lately on account of the promulgating of the new law concerning the weekly day of rest.

This new law makes it obligatory for workmen employed industrially to abstain from labor one day in each week. This law has created a great sensation among the distillers who are compelled to work without cessation at certain seasons of the year when the flowers are ready for gathering.

The absolute provisions of the law are, however, tempered in favor of those employed upon perishable goods, to which class the manufacturers of perfume raw materials naturally belong. To workmen thus employed the law allows labor for fifteen Sundays each year, but even during this active period the employees and workmen must have two days' rest each month.

The perfumers of Grasse have decided to make representations to the Government for a necessary modification of the law, so that their workmen can be employed consecutively at required seasons.

The distillation of oil of lavender is now completed, and, as has been before indicated here, the crop is very short. Prices are correspondingly high. The best grades now rule at prices corresponding to three dollars and three twenty-five in the United States. The cheaper grades are not so scarce, but still prices are higher than last year.

On the 30th of September a meeting of the growers of Mouans-Sartoux was held with the avowed purpose of preventing the sale of flowers at too low prices. One of the authorities of the district calls attention to the fact that the blossoms are commanding constantly increased prices, without any such combination and questions the need of this organization. It is stated that Jasmin at 4 francs is most profitable; orange-flowers selling at 1.75 fr. are commanding three times the agreed price of 60 centimes; violets are selling at from 25% to 30% more than the agreed figure; cassie commands 20 fr. a kilo.; lavender flowers are selling for 30 fr. and over. Roses alone have decreased in price, and

this is due to the absolute law of supply and demand. The entire question will be and can be settled in accordance with this law and this law alone. It remains to be seen what will come of this new combination.

Oil of vetiver is now being distilled from the roots imported from India, and the quality of root coming to this market cannot fail to have a marked influence upon the price of the oil. Much of the root is poor, so poor in fact that the oil distilled is not at all satisfactory. The prospects are that oil of vetiver Indian of the best quality, properly aged, will command forty-five dollars a pound and upward.

Special attention of the readers of this paper is called to the fact that the F. S. Towle Co., Inc., of 332 Broadway, New York City, are the sole agents for North America for the leading manufacturers of specialties for the drug and perfumery trades. This concern carries in stock a magnificent line of tin cans, boxes and metal specialties, consisting of advertising signs, novelties, etc., which are adaptable for many toilet specialties, and, so far as the line has been shown, has met with a good demand, and some exceptionally large orders have been booked.

They also represent several large manufacturers of paper boxes, and their line of perfumery boxes has met with a sale that has far exceeded their most sanguine expectations.

An inspection of this line will prove interesting and of value to any concern wanting goods that will add to the selling power of their products.

The Larkin Soap Co. has recently acquired an entire block in Peoria, Ill., and has also purchased property in Rockford, Ill., where a factory 80 x 305 feet will be erected for the manufacture of premiums.

LOOK OUT!

G. D. Graham is what he calls himself. He pretends to be connected with the firm of Stafford Allen & Sons, Ltd., London. He always wants to borrow money. The trade should beware. He is an adventurer disavowed by the English firm.

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TYPICAL IN ODOR—HIGH IN EFFICIENCY

AMERICAN BRANCH, 15 PLATT STREET, NEW YORK

THE NEW SCOPE OF THIS JOURNAL

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1906.

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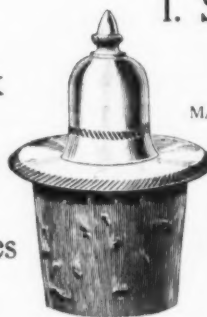
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